



PATENT APPLICATION

AF 1043  
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9/2/04

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Docket No: Q55591

Jun-jin KONG, et al.

Appln. No.: 09/386,965

Group Art Unit: 2631

Confirmation No.: 1967

Examiner: PHU, PHUONG M.

Filed: August 31, 1999

For: METHOD AND APPARATUS FOR DETERMINING RATE OF DATA  
TRANSMITTED AT VARIABLE RATES

**APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. § 1.192**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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AUG 26 2004

Technology Center 2600

Sir:

In accordance with the provisions of 37 C.F.R. § 1.192, Appellant submits the following:

**I. REAL PARTY IN INTEREST**

The real party in interest is SAMSUNG ELECTRONICS CO., LTD, by virtue of an assignment executed by Jun-jin Kong, Min-goo Kim, Hyun-woo Park and Byung-ho Min (Appellants, hereafter), on November 27, 1999, and recorded by the Assignment Branch of the U.S. Patent and Trademark Office on December 8, 1999 (at Reel 010447, Frame 0481).

**II. RELATED APPEALS AND INTERFERENCES**

To the knowledge and belief of Appellants, the Assignee, and the undersigned, there are no other appeals or interferences before the Board of Appeals and Interferences that will directly affect or be affected by the Board's decision in the instant Appeal.

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**III. STATUS OF CLAIMS**

The application was originally filed with claims 1-26. Claims 27-40 were added by Preliminary Amendment filed December 8, 1999. Claims 1-40 are all of the claims currently pending in the application.

Claims 1-2, 4, 10 and 12 are rejected under 35 U.S.C. § 102(b) as being anticipated by Butler (USP 5,566,206)

Claims 5-9 and 13-40 are allowed.

Claims 3 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claims.

**IV. STATUS OF AMENDMENTS**

There are no outstanding amendments in this application.

**V. SUMMARY OF THE INVENTION**

The present disclosure relates to a method and apparatus for determining the rate of data transmitted in a variable-rate communications system. In the prior art (Fig. 1), the data rate of received data is determined by Viterbi decoding the received data at different rates (elements 101, 106, 11 and 116 of Fig. 1), and re-encoding the Viterbi decoded data (elements 102, 107, 112 and 117 of Fig. 1), identifying errors by comparing the re-encoded data to the received data (elements 103, 108, 113 and 118 of Fig. 1), and counting the errors in the re-encoded data (elements 104, 109, 114 and 119 of Fig. 1). Based on the counted errors, the microprocessor 122 determines the data rate of the received data 123. The inclusion of four Viterbi decoders complicates the structure and results in a time consuming data rate determination process. (See the specification at page 1, line 15, to page 2, line 11.)

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The present disclosure improves upon the prior art by providing an apparatus as shown, for example, in Fig. 2. Instead of Viterbi decoders 101, 106, 111 and 116, pre-processing units 205, 210 and 215 and pre-decoders 201, 206, 211 and 216 are provided. Based upon errors counted by elements 204, 209, 214 and 219, decision unit 220 drives selector 221 and Viterbi decoder 222 to properly decode the received data 223 according to the data rate of the received data 223. (See the specification, beginning at page 3, line 25.)

**VI. ISSUES**

The sole issue on appeal is whether claims 1, 2, 4, 10 and 12 are properly rejected under 35 U.S.C. § 102(e) as being anticipated by Czaja et al (USP 6,424,631).

**VII. GROUPING OF CLAIMS**

For purposes of the present appeal, the rejected claims do not stand or fall together. Specifically, the rejected claims are divided into the following separately patentable groups.

Group 1:        Claims 1, 4, 10 and 12.

Group 2:        Claim 2.

**VIII. ARGUMENTS**

In rejecting claims 1 and 10, the Examiner cites Fig. 1B and Fig. 3 and col. 7, line 4, to line 8, line 64 of Czaja et al., as disclosing each of the claimed features. The Examiner considers the combination of the despreader 206 and rate determination unit 208 of Czaja et al to be equivalent to the step of pre-decoding data received at variable data rates and detecting quality information of the pre-decoded data received at the respective data rates, as recited in claim 1 (and a somewhat similar feature recited in claim 10).

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The despreader 206 of Czaja receives demodulated encoded data 212, despreads the encoded data and outputs soft symbol data 214 to both the rate determination unit 208 and the decoder 210. The rate determination unit 208 performs calculations as shown in col. 8, lines 25-38, and based upon the results of these calculations determines the rate as explained at col. 8, lines 38-64.

Appellants submit that the combination of the despreader 206 and the rate determination unit 208 is different from the claimed step of pre-decoding data. That is, the despreader simply despreads a spread spectrum and the rate determination unit 208 simply performs calculations in order to determine a data rate. The despreader and rate determination unit, acting alone or in combination, do not perform a step of pre-decoding data received at variable data rates and detecting quality information of the pre-decoded data received at the respective data rates", as required by claim 1. The Examiner considers the despreader to perform a pre-decoding function. However, the despreader merely despreads the spectrum of the encoded data to supply the encoded data, and no pre-decoding is performed. The despread data is still fully encoded. Despredding cannot be viewed as having any decoding function.

For similar reasons, Appellants submit that claim is not anticipated by Czaja et al, at least because Czaja et al does not disclose or suggest the claimed "first means for pre-decoding data received at variable data rates, without using Viterbi decoding, and providing quality information concerning the pre-decoded data received at the respective data rates."

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Claim 2 is believed to be separately patentable from claims 1, 4, 10 and 12. Claim 2 depends from claim 1 and further recites "wherein the pre-decoding in step (a) is performed using an inverse function of a generating function used for encoding." Appellants submit that this feature is not taught or disclosed by Czaja et al. The despreaders 206 of Czaja et al merely despreads the received data. Since spreading the spectrum of a waveform is not an encoding process, despreding the spectrum is not "an inverse function of a generating function used for encoding."

The present Brief on Appeal is being filed in triplicate. Unless a check is submitted herewith for the fee required under 37 C.F.R. §1.192(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Peter A. McKenna  
Registration No. 38,551

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE

**23373**

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Date: August 19, 2004



## APPENDIX

U.S. APP. NO. 09/386,965

### CLAIMS 1, 2, 4, 10 and 12 ON APPEAL:

1. A method for determining the rate of received data in a variable-rate communications system, the method comprising the steps of:
  - (a) pre-decoding data received at variable data rates and detecting quality information of the pre-decoded data received at the respective data rates; and
  - (b) estimating the rate of the received data based on the quality information of the pre-decoded data at the respective data rates, wherein the pre-decoding step is performed without using Viterbi decoding.
2. The method of claim 1, wherein the pre-decoding in step (a) is performed using an inverse function of a generating function used for encoding.
4. The method of claim 1, further comprising the step of:
  - (c) Viterbi decoding only the data corresponding to the estimated data rate.
10. An apparatus for determining the rate of received data in a variable rate communications system, the apparatus comprising:
  - a first means for pre-decoding data received at variable data rates, without using Viterbi decoding, and providing quality information concerning the pre-decoded data received at the respective data rates; and
  - a second means for estimating the rate of the received data, based on the quality information of the pre-decoded data received at the respective data rates.

12. The apparatus of claim 10, further comprising a Viterbi decoder for Viterbi decoding only the data corresponding to the estimated data rate.



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Sir:

Submitted herewith please find an original and two copies of Appellant's Brief on Appeal. A check for the statutory fee of \$330.00 is attached. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,

Peter A. McKenna

Registration No. 38,551

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

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